Peter McKenzie Armstrong

Pitch/Time Swaps

as applied to the Fugue subjects of

J.S. Bach's *Das Wohltemperierte Klavier*

scored for solo piano

Op. 39, 2nd Ed.

Edition Ottaviano Petrucci

NOTES

GENERATION

Encoded as an X/Y dot graph, rotated 90 degrees, then read in that position left–to–right, musical scoring is seen with its essential parameters exchanged, pitch indications having become instead relative attack times and vice versa. With the rotation anticlockwise (as in these examples), pitchwise top/bottom translate to timewise first/last, etc.

I have applied this procedure to the Fugue subjects of J.S. Bach's *Das Wohltemperierte Klavier*, trusting that juxtaposition of such originals (linear only) and their rotations (mainly chordal) may enhance its promise as a compositional option.

As used here, the rotation addresses its source's sounding notes only (not also rests) and without subsequent reportioning of the results (as with many integral–serialist algorithms). For a representative graph see Appendix A.

RE "X/Y–>Y/X" SECTIONS:

NOTATION

– Notehead colors: green, the original's recurrent pitches; red, the rotation's corresponding simultaneities; grey, exceptions (applying in both senses).
– Accidentals (default '#' in their generating graph) are respelled in their score as appears harmonically and voice–leading–wise most plausible.
– Meter signatures and articulation markings are chosen post–process as best to convey emergent patterns.

PERFORMANCE

– Accidentals apply once only, c/o LilyPond's style "forget".
– Tied anticipations, unless slashed, are to occur on–beat.
– Legato connection is intended only within slurs, not also from their final note.
– Damper pedal use is expected for realizing slurs where necessary, or for enhancing immediate resonance, but not for connecting non–slurred notes.
– I suggest programming as a selection of perhaps six of these pages with their order, tempi, dynamics and hand distributions at player's discretion.

MISCELLANY

– WTC I:19 – I have extended this quoted subject a full bar beyond its answer's entry.
– WTC I:24 – Source pitches recurring only in embellishment are not counted for rotation.
– WTC II:10 is the only subject rotated in separate sections; its length otherwise forces unworkably overstacked chords.
– Rotating fugue subjects alone presents only recurrence–>simultaneity. For an example addressing also the reverse, see Appendix B.
– Suggested articulations for performance of the fugue subjects per se are listed in Appendix C. I do not claim that these are original with me, though I expect some are. Their listing is separated from the main score, as performance issues in the source were not factors in the parameter–swapping as conceived.

– PMA

to Kevin Korsyn

Pitch/Time Swaps

as applied to the Fugue subjects of J.S.Bach's *Das Wohltemperierte Klavier*

scored for solo piano

Peter McKenzie Armstrong, Arr.

Opus 39

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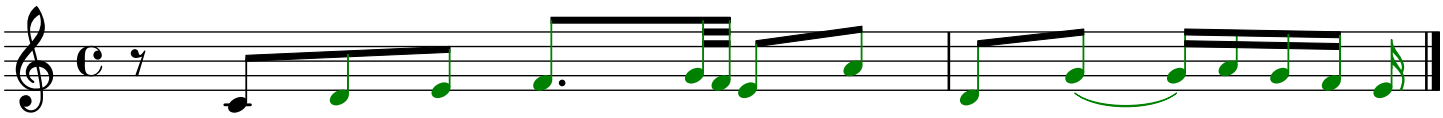
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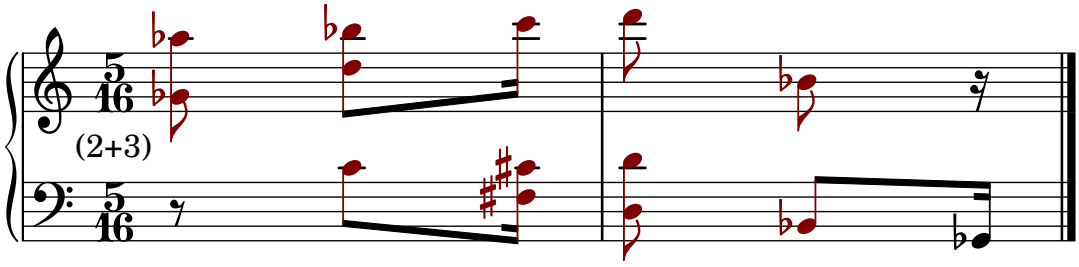

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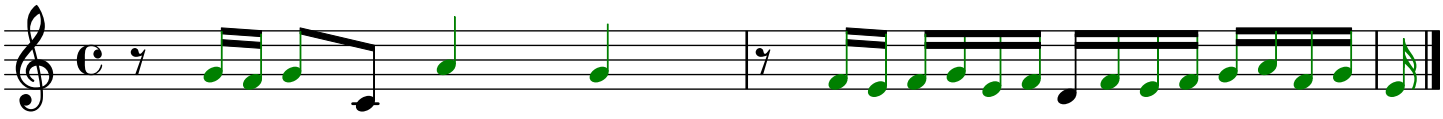
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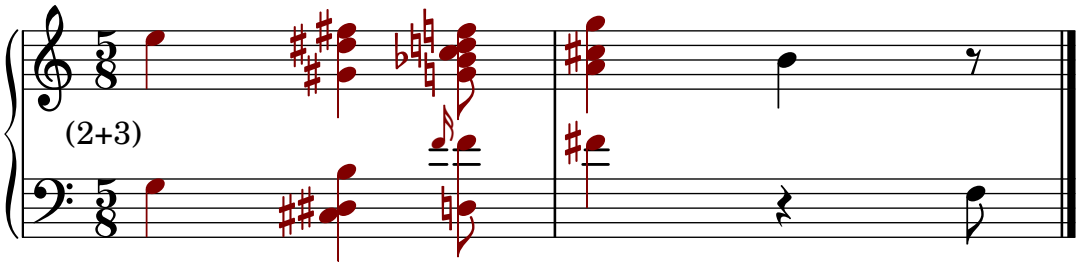

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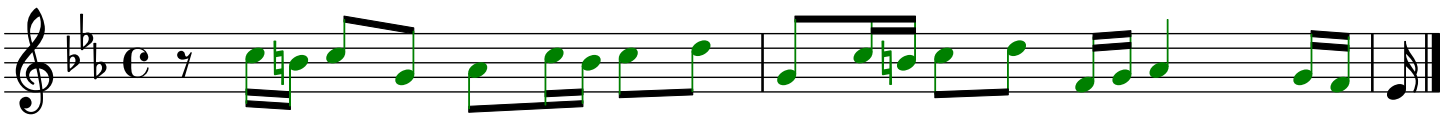

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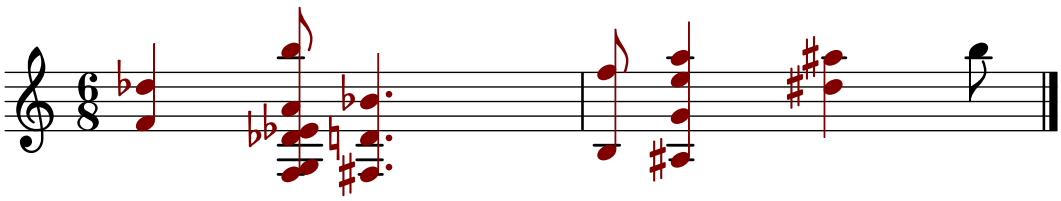

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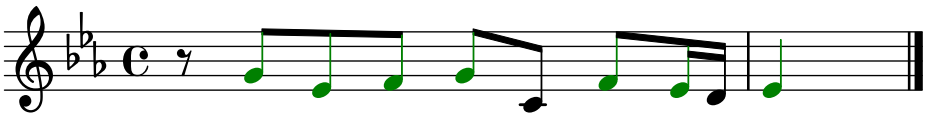

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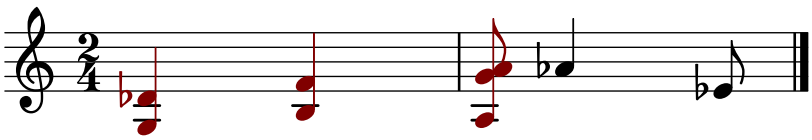

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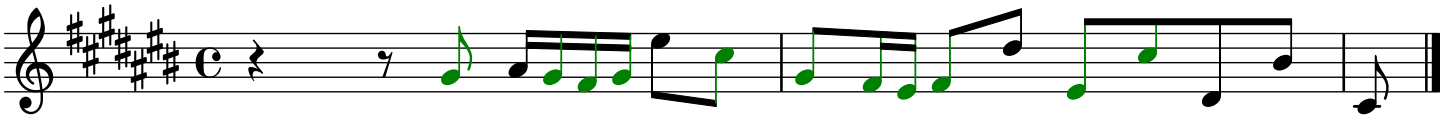

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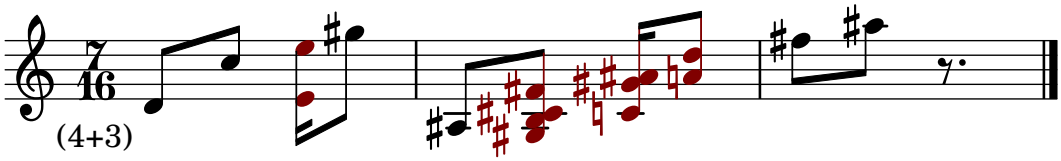
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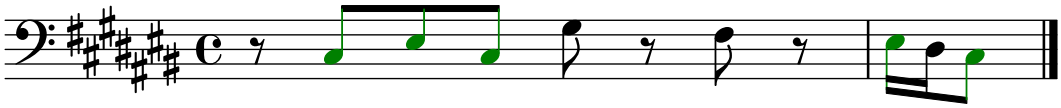
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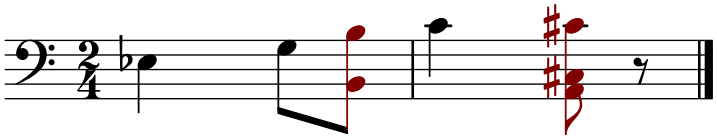

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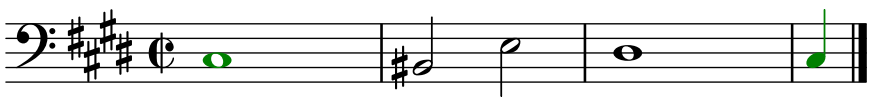
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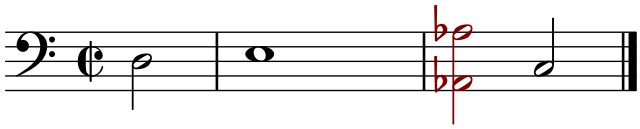

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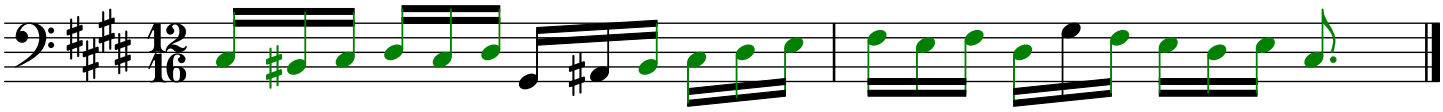

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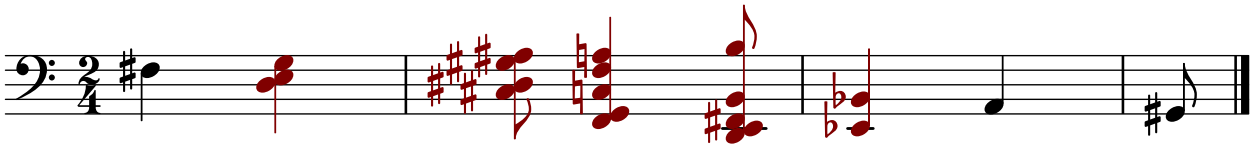

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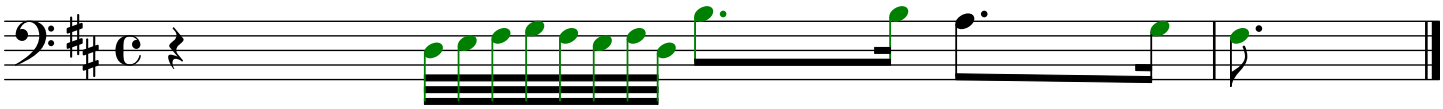

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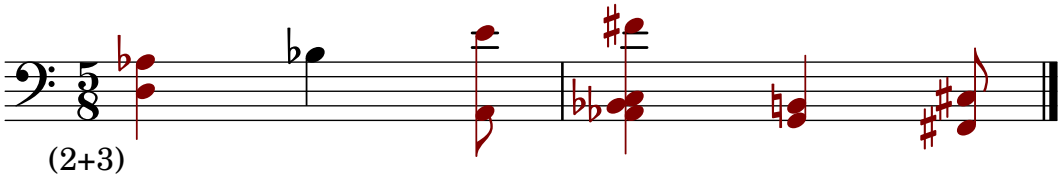

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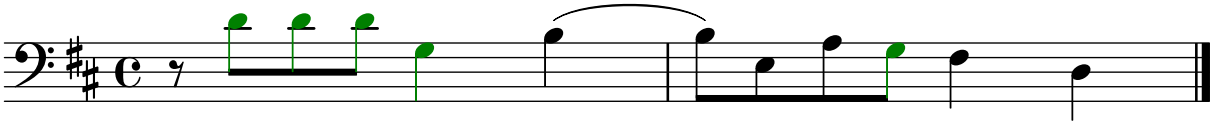

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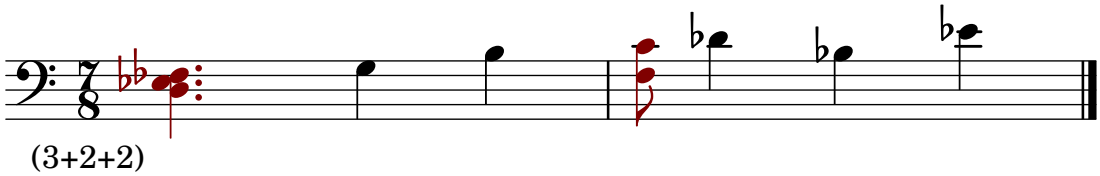

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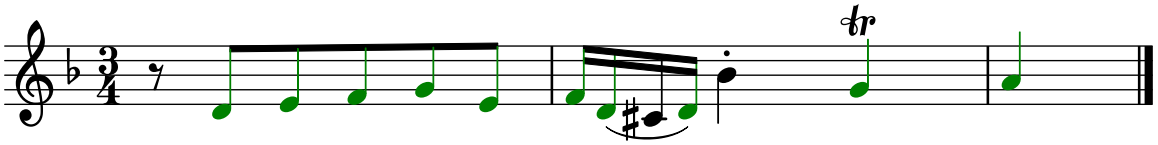
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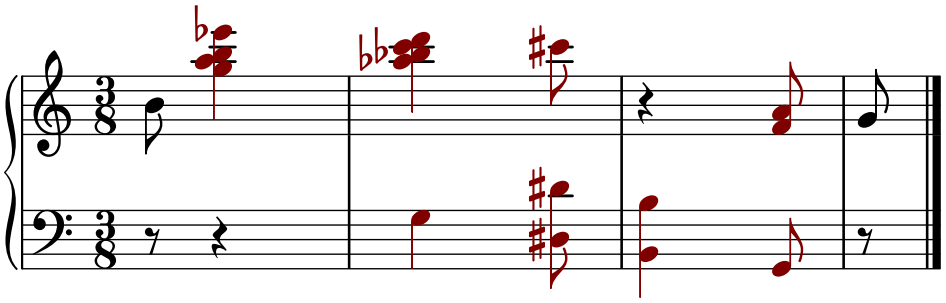

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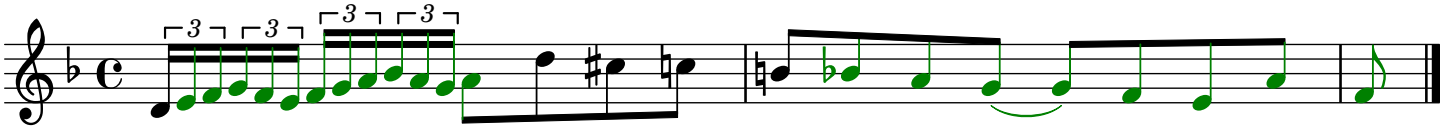
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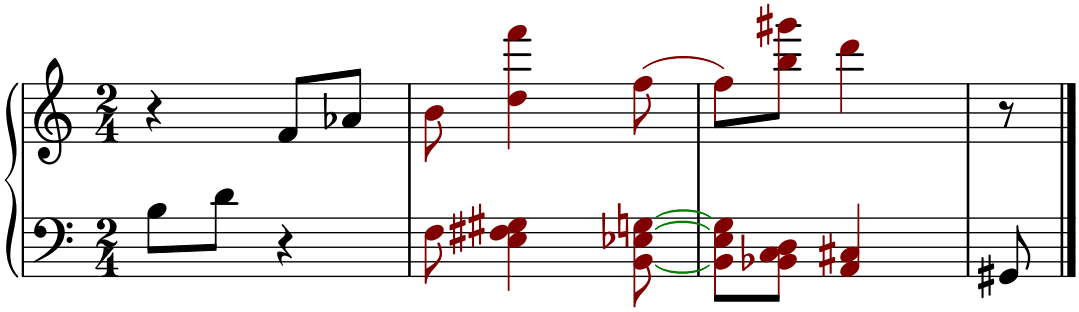

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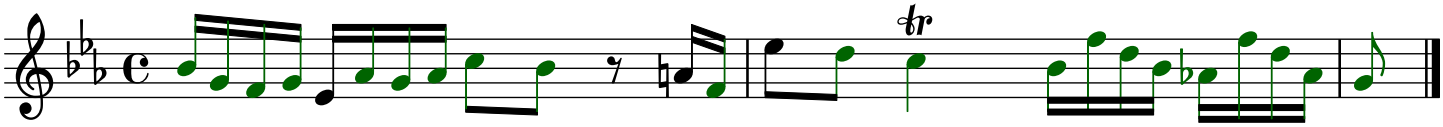
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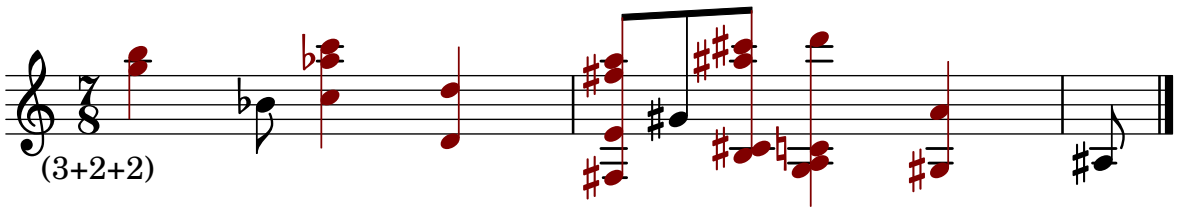

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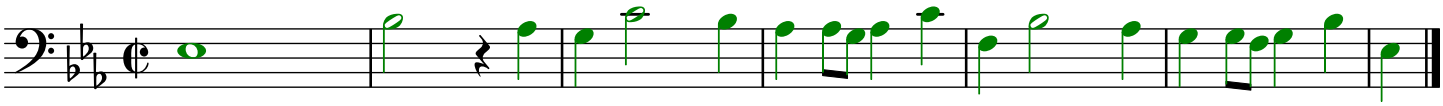

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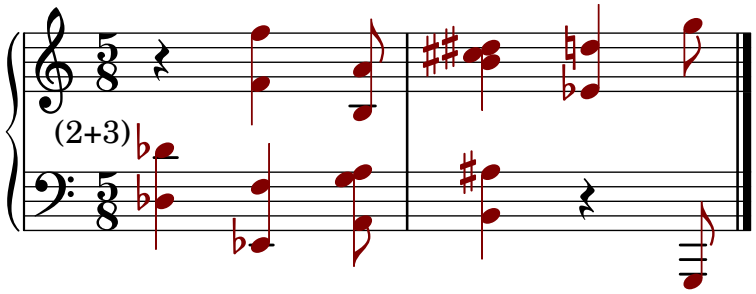

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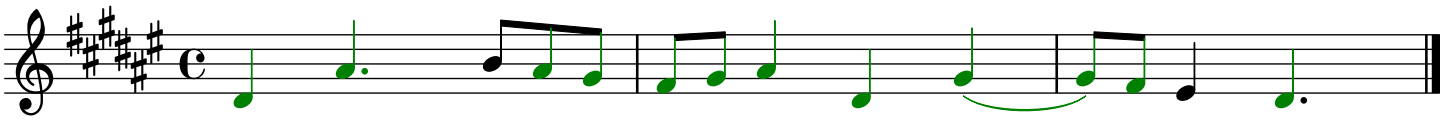
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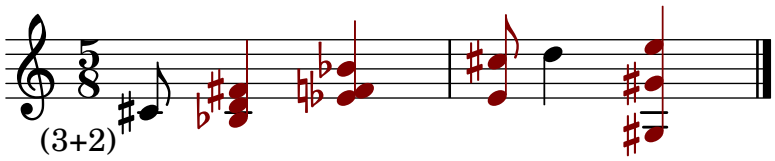

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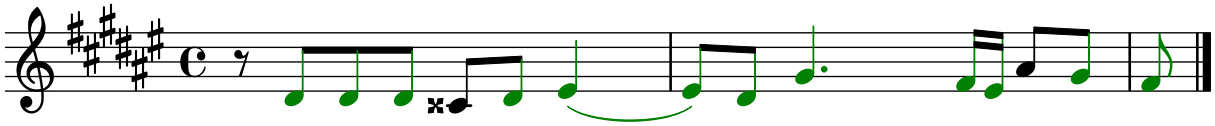

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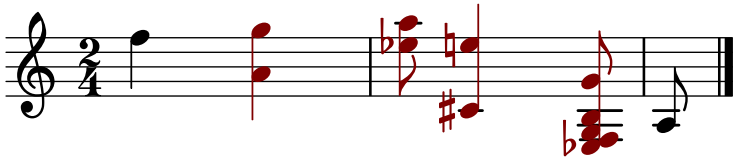

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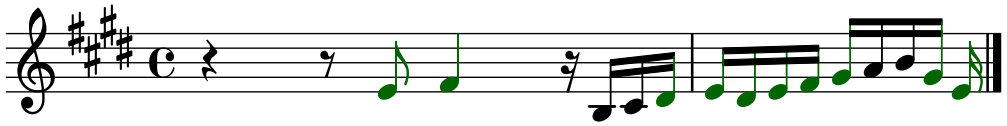

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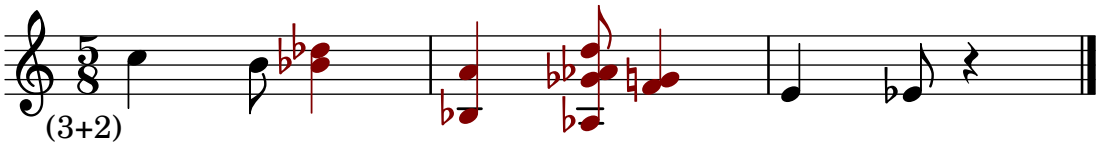

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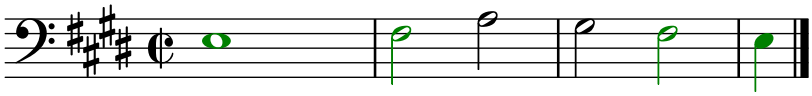

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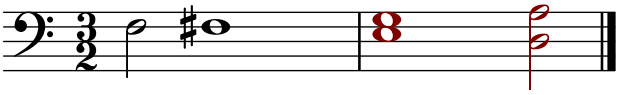

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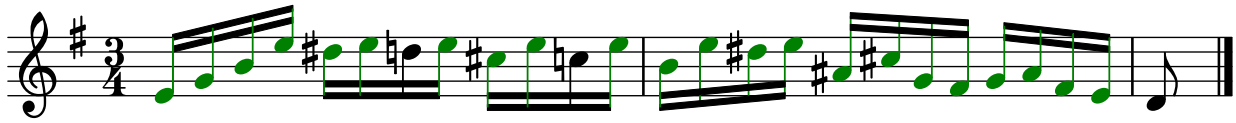
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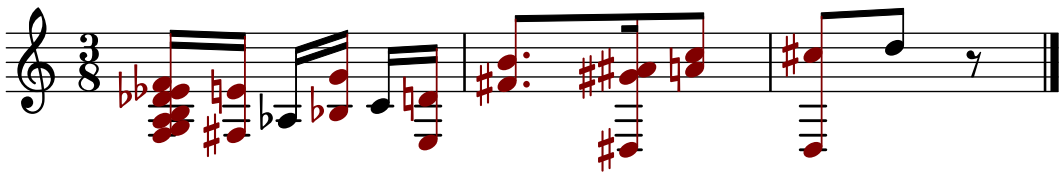

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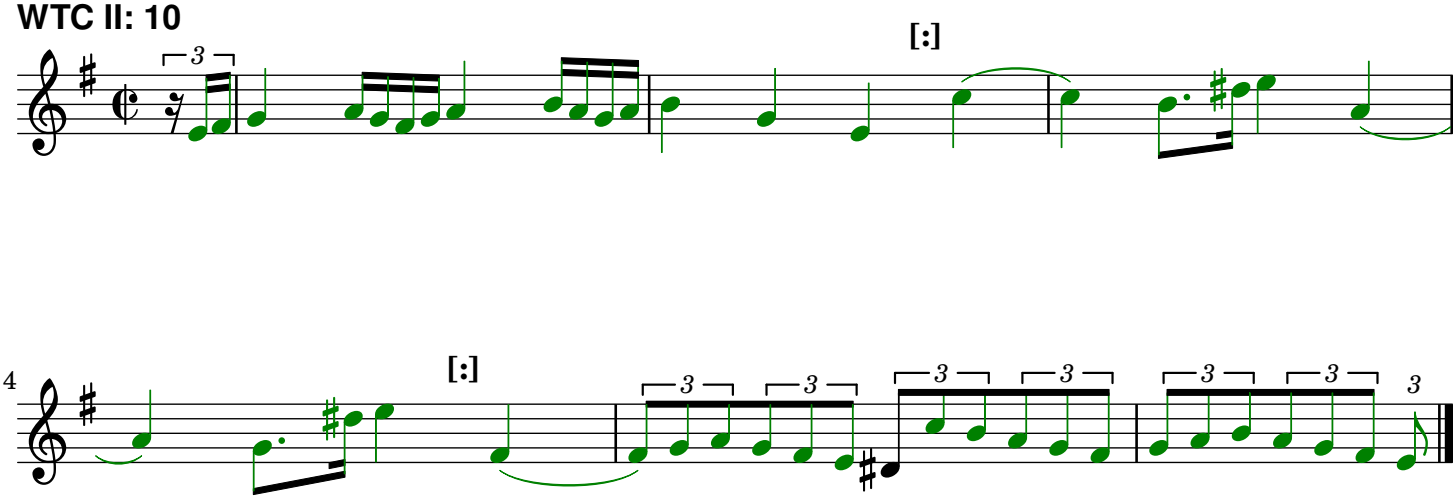

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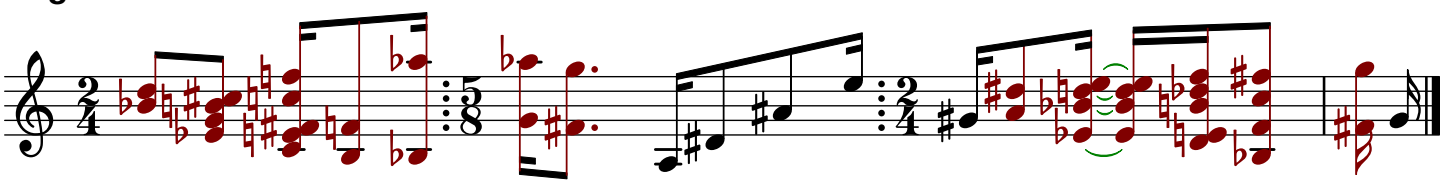

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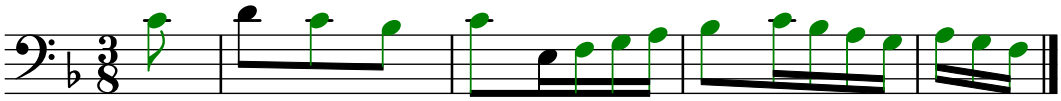
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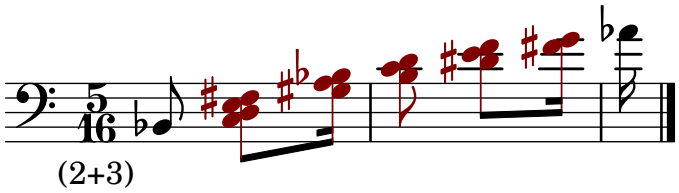

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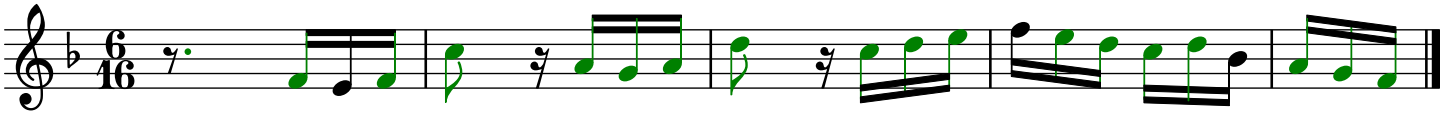

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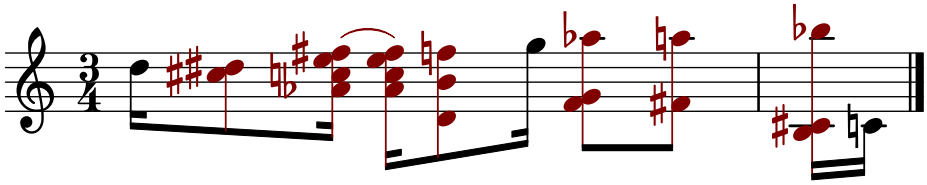

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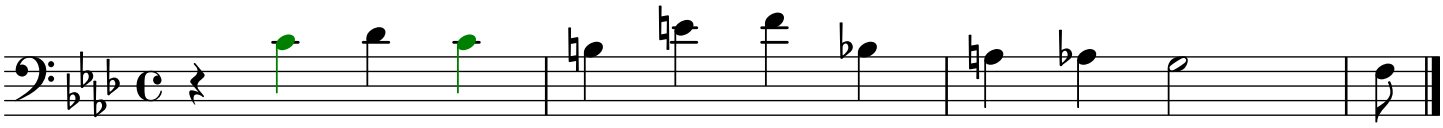
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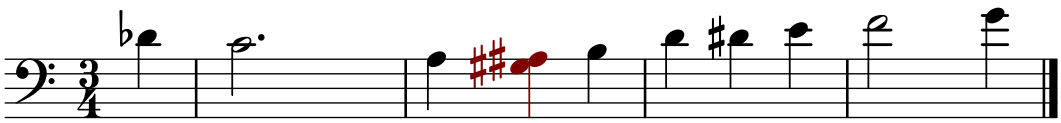

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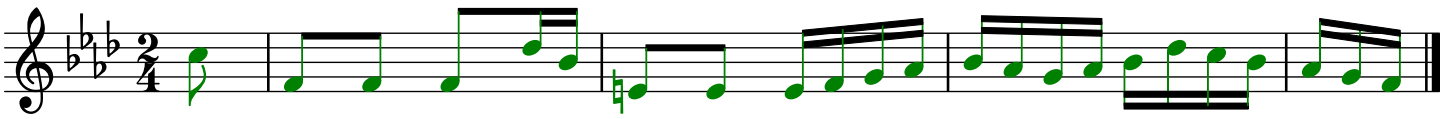
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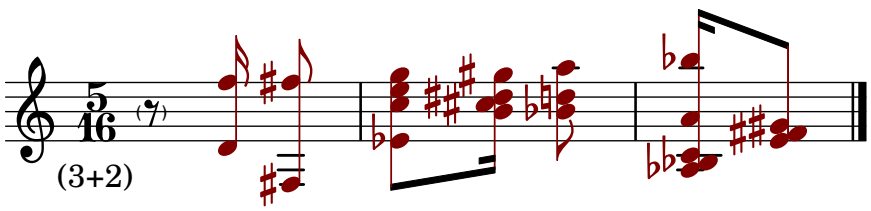

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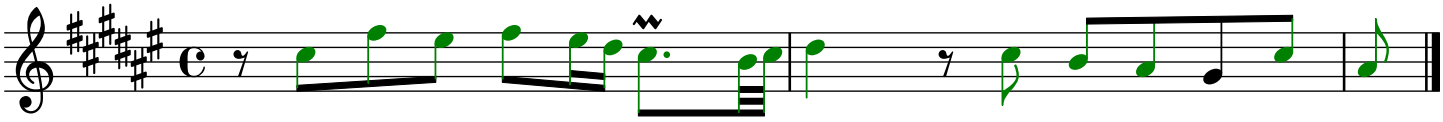

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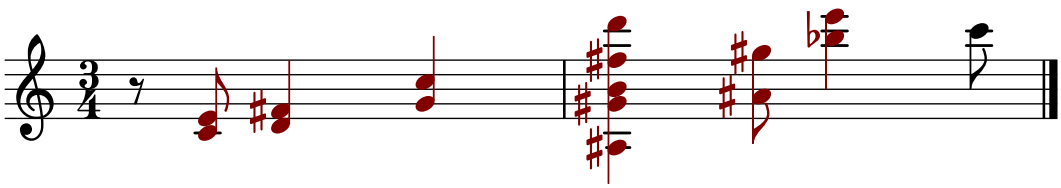

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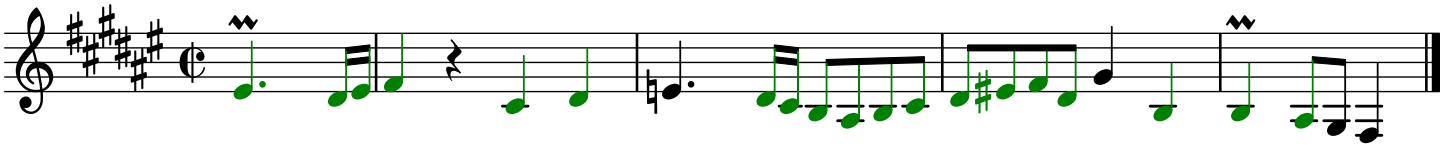
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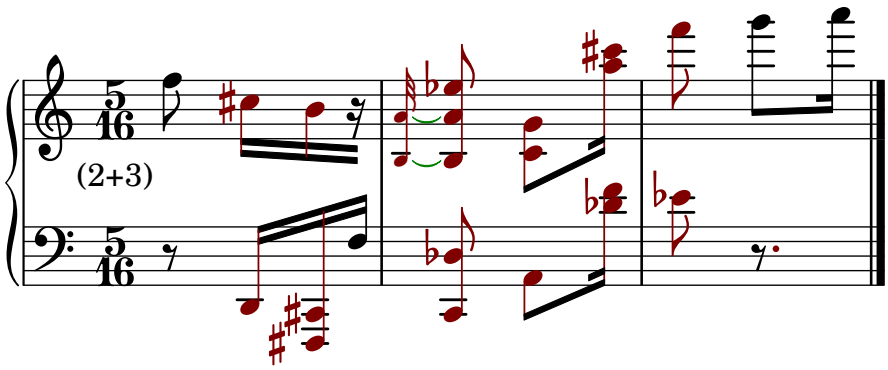

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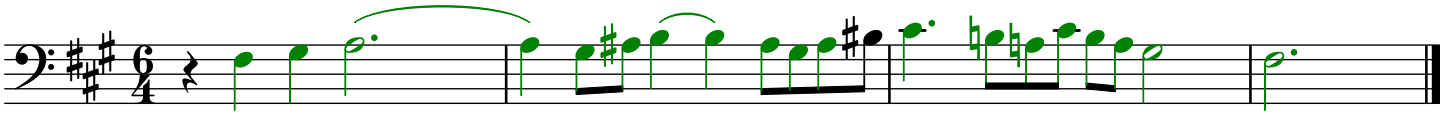

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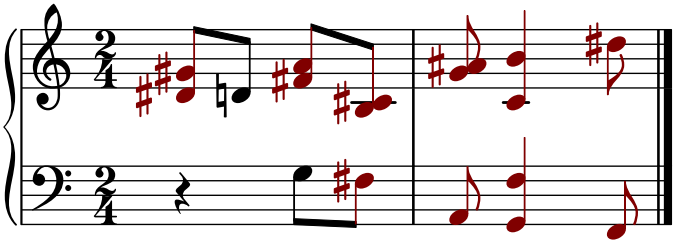

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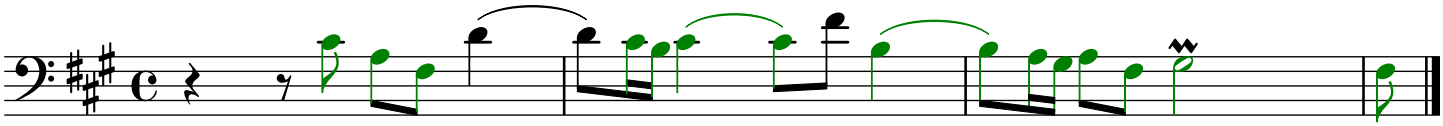

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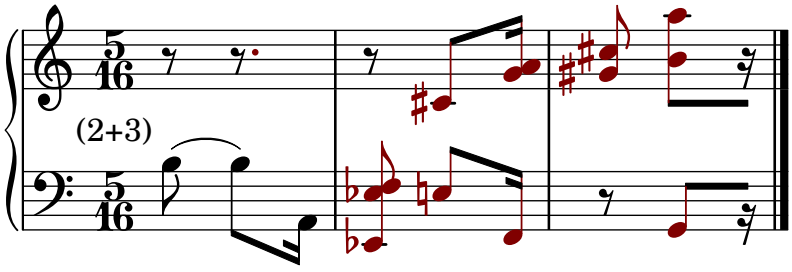

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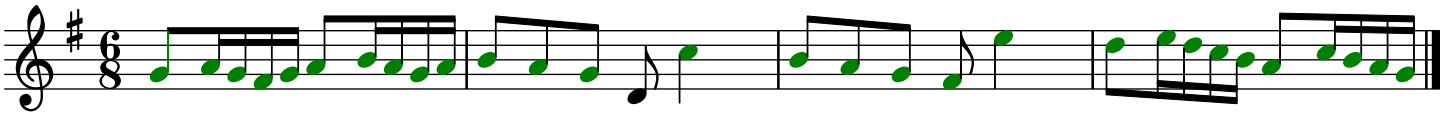

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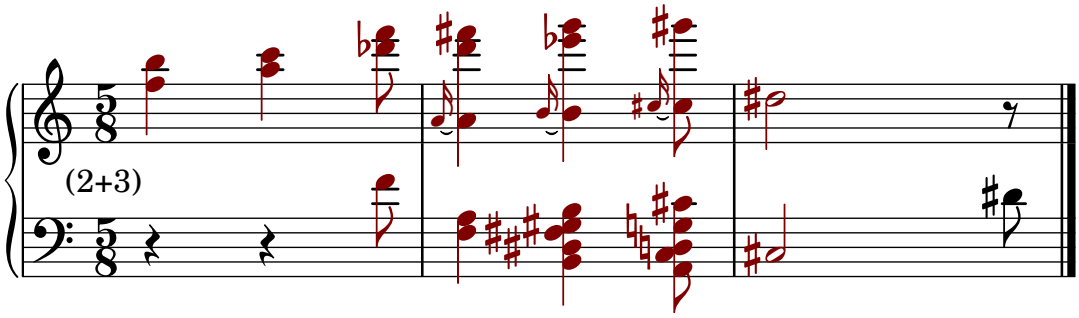
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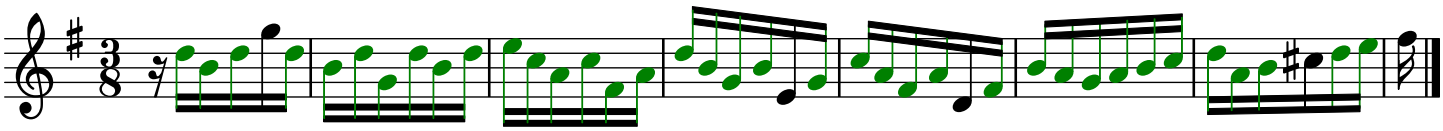
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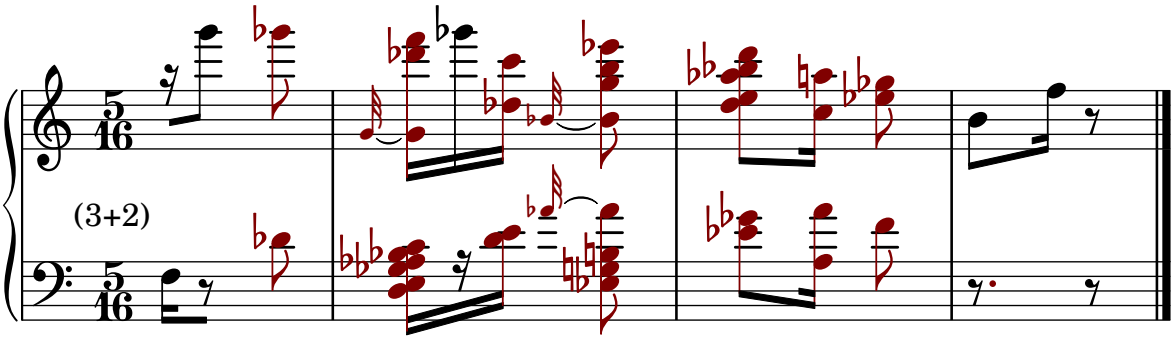

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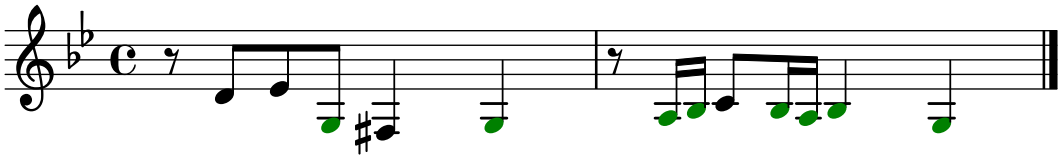

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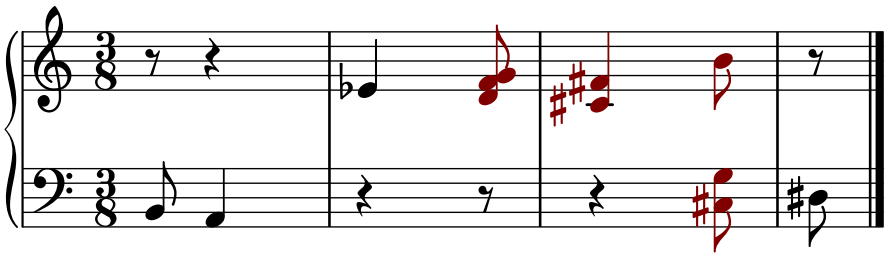

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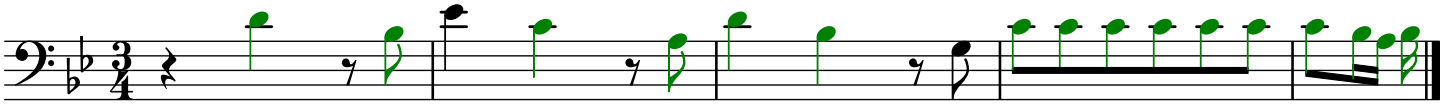

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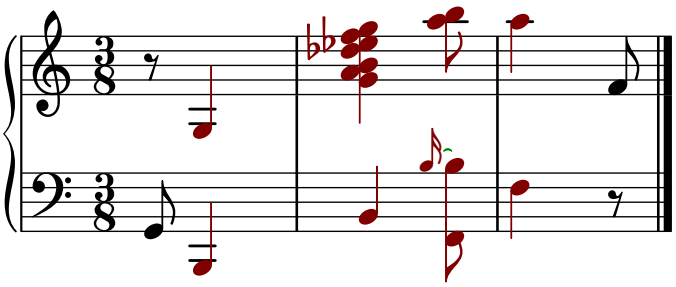

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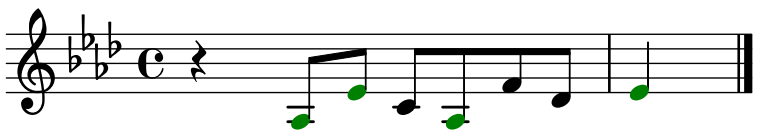
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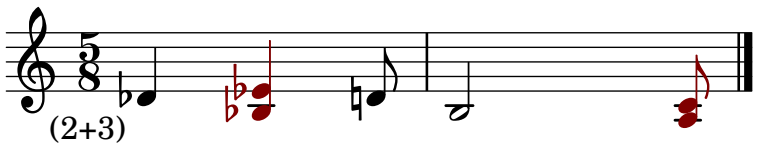
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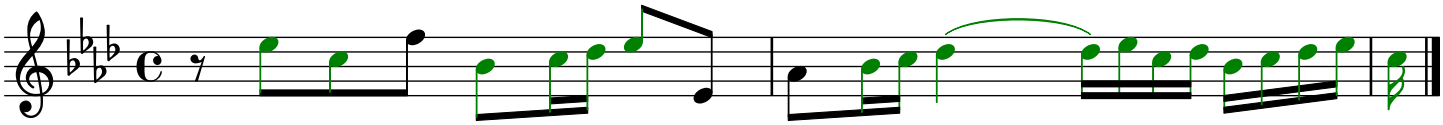
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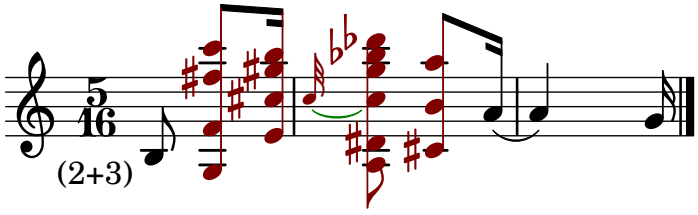
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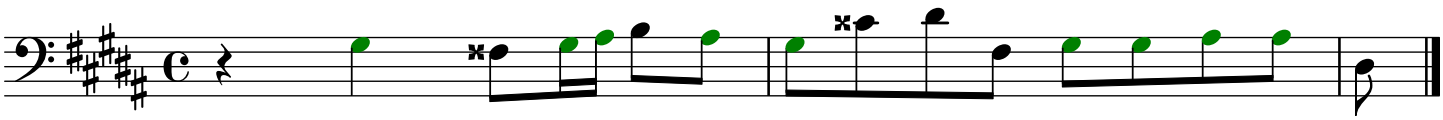

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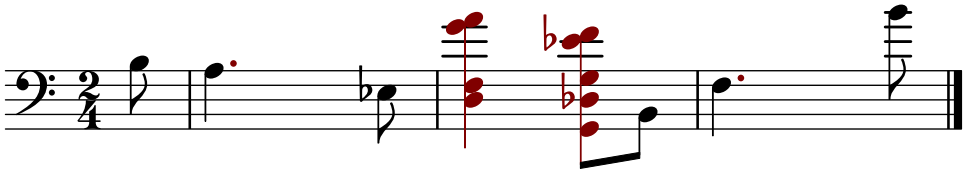

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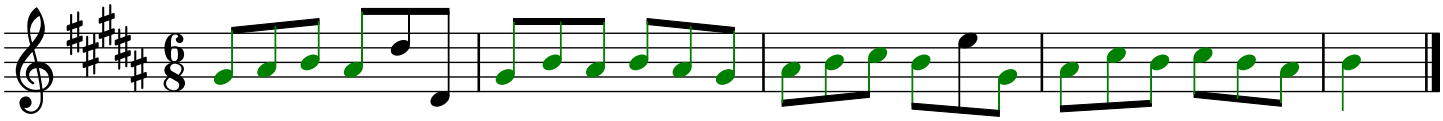

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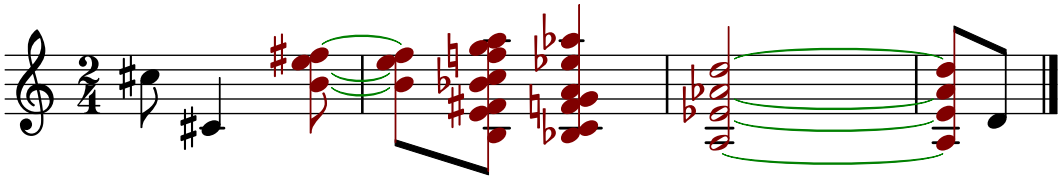

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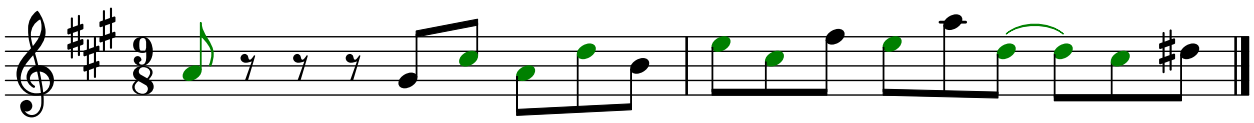

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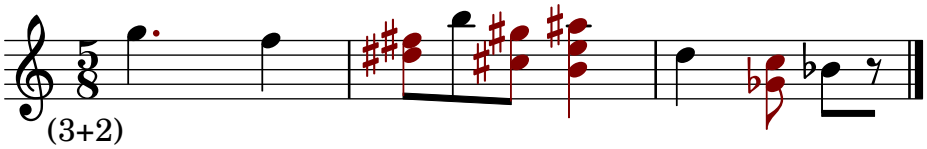

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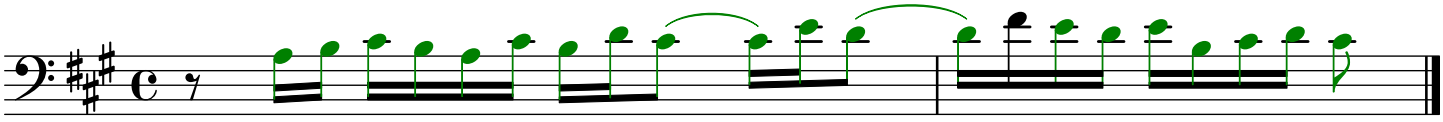

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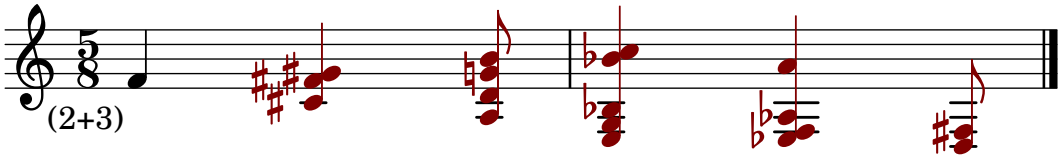
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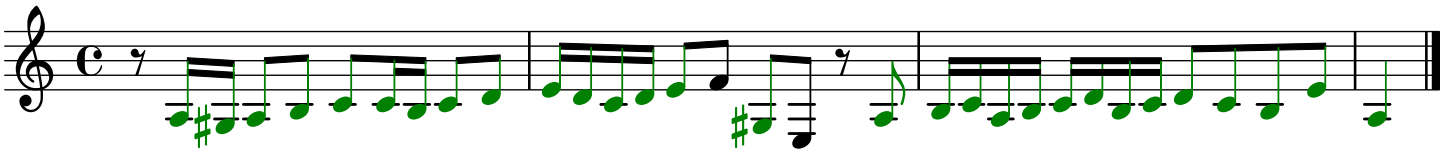
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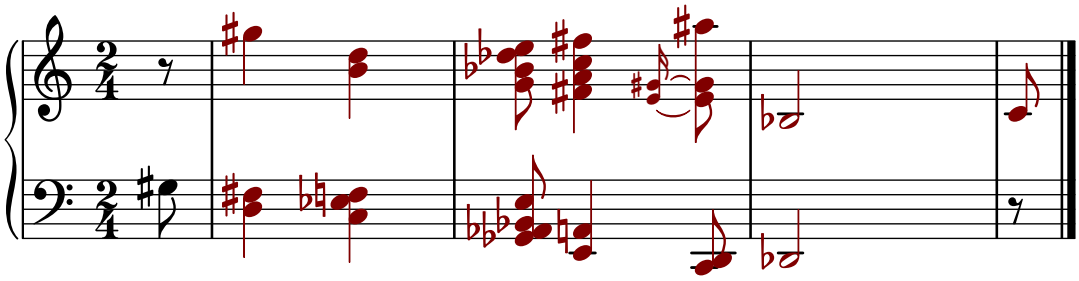

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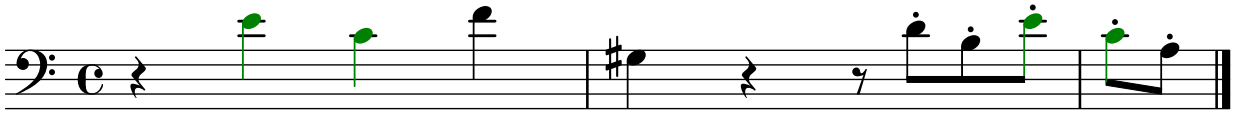

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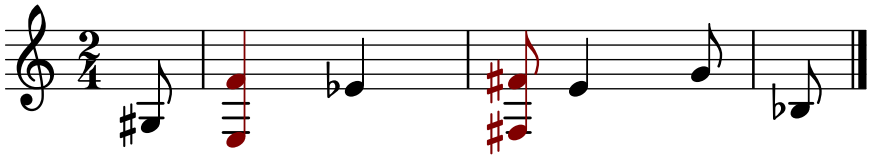

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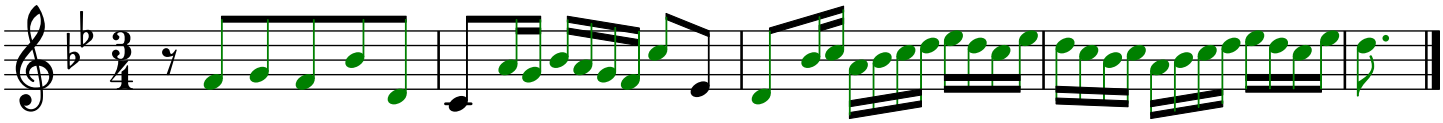
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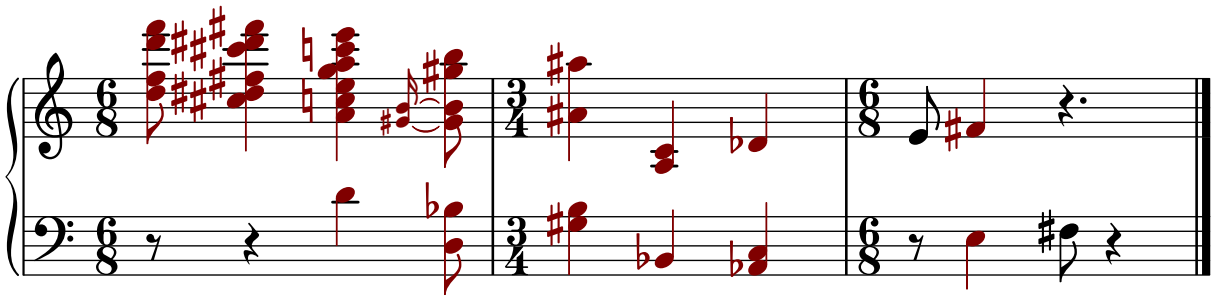

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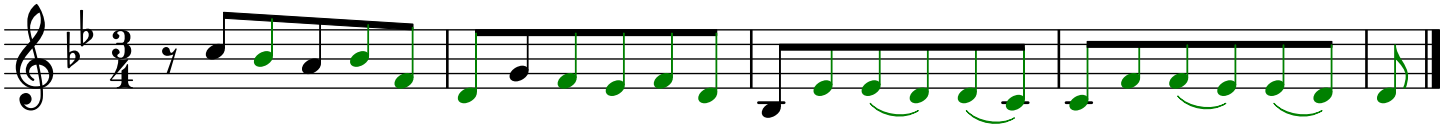
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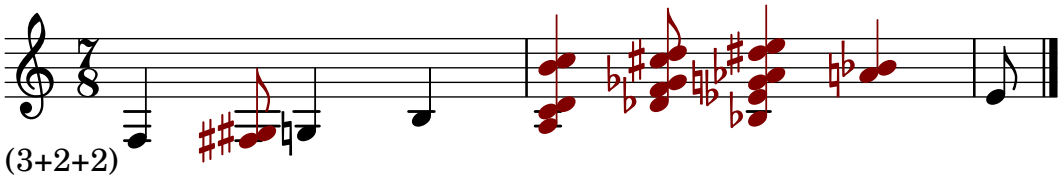

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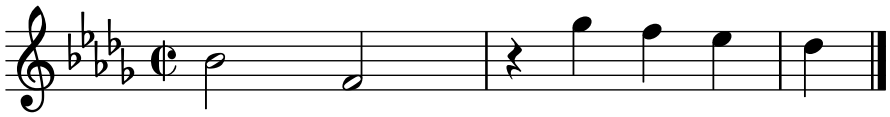

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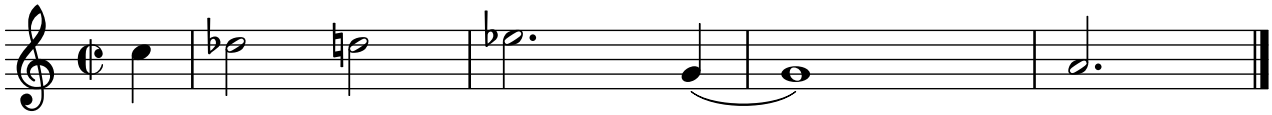

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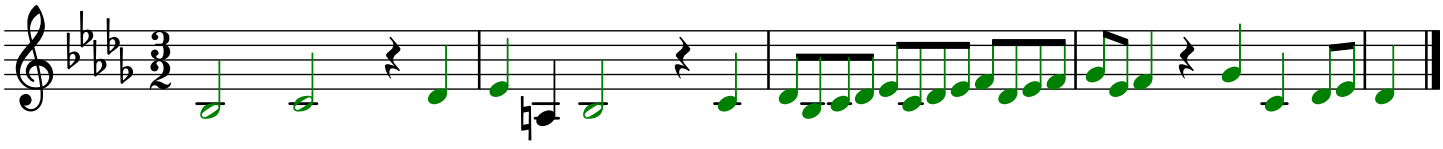

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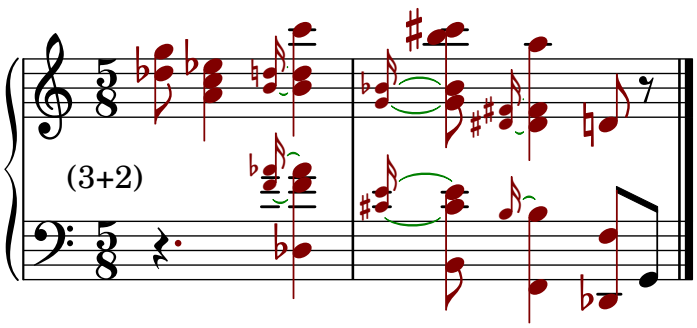
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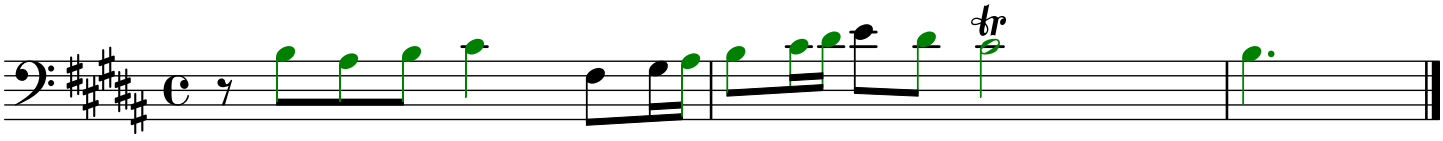

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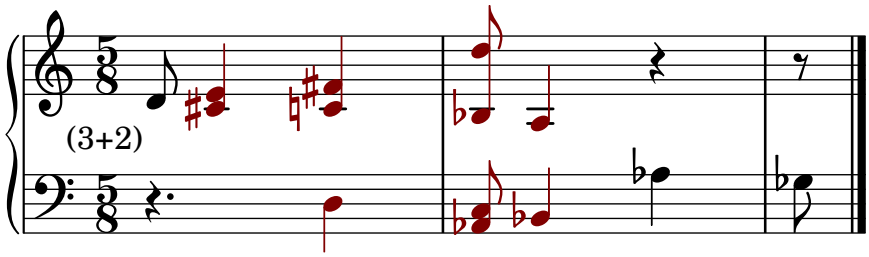

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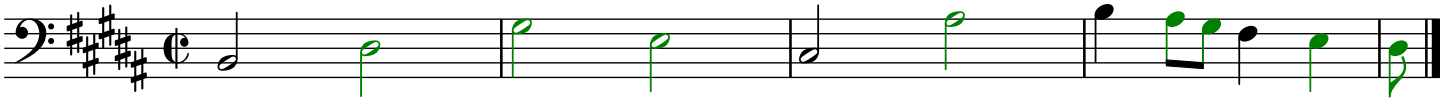

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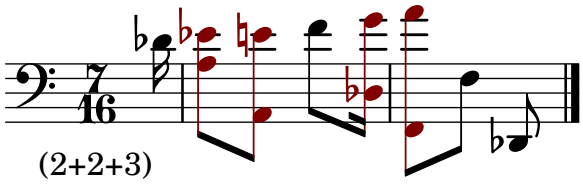

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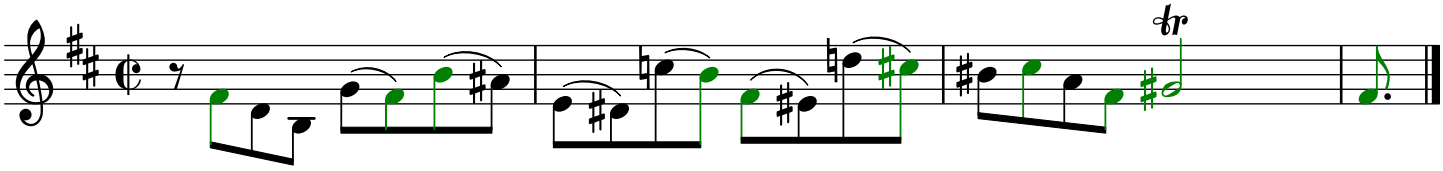

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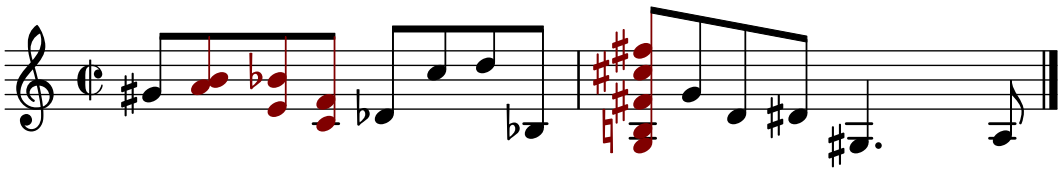

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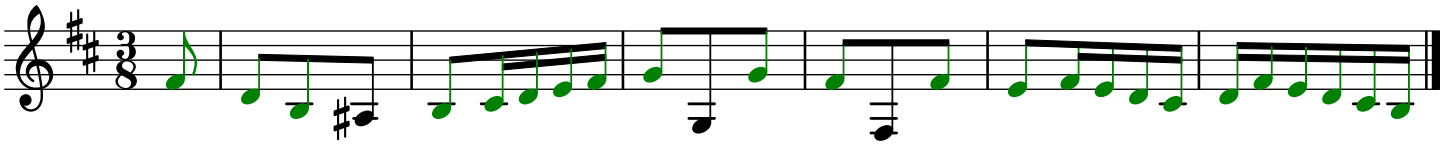

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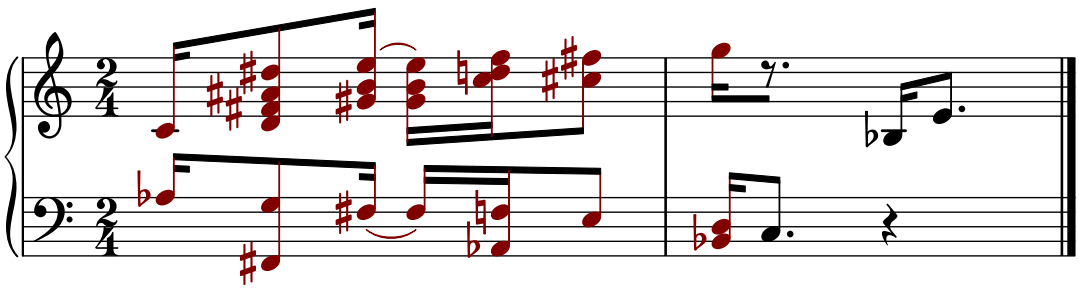
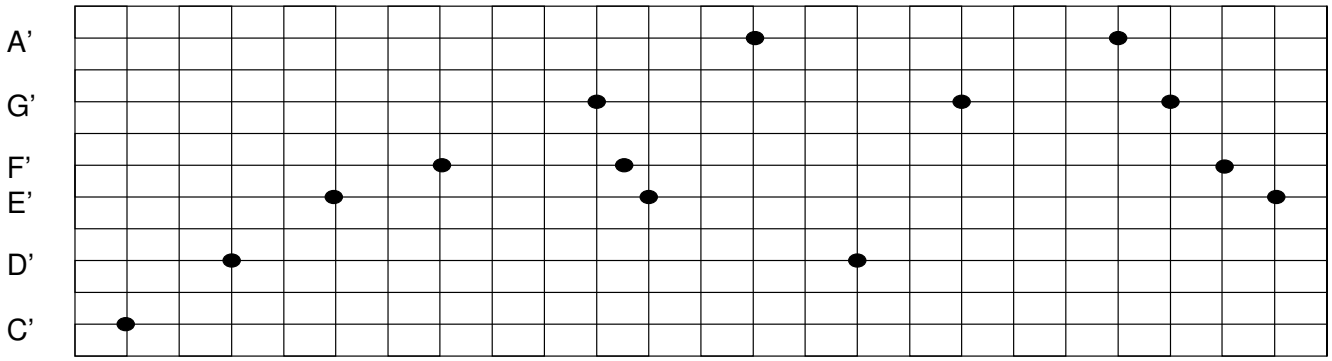
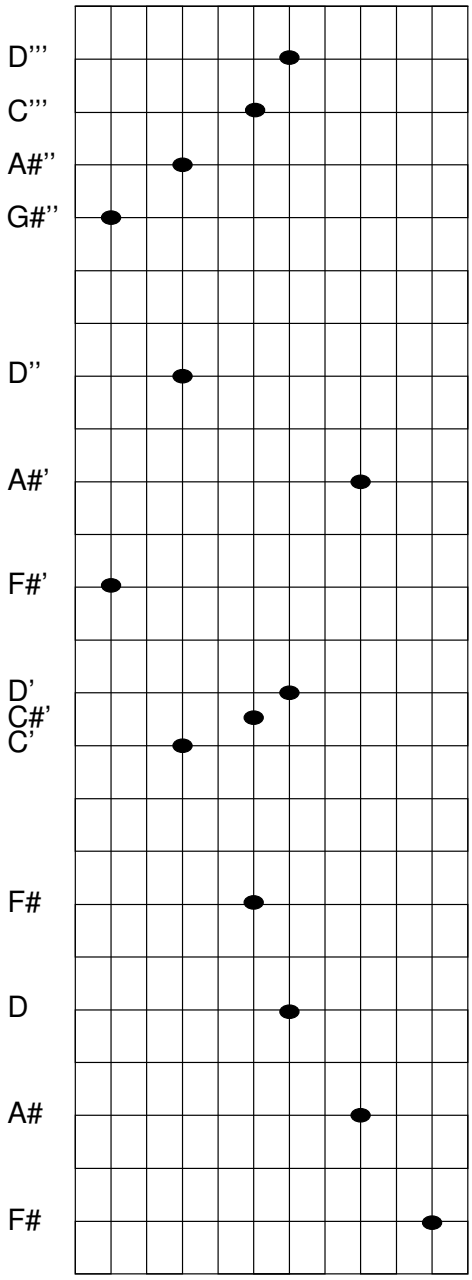


Music engraving by LilyPond 2.22.0—www.lilypond.org

Appendix A *

Rotation–Graph Example





ABOVE: WTC I:1 (BWV 846), Fugue Subject

Generally these vertical/horizontal grid units match their source’s minimum interval/duration. Exceptions, such as this example’s offline F’, will not affect their note’s scored proportions.

Octave level is per LilyPond’s notation.

OPPOSITE: X/Y–>Y/X, 90 Deg ACW Rotation

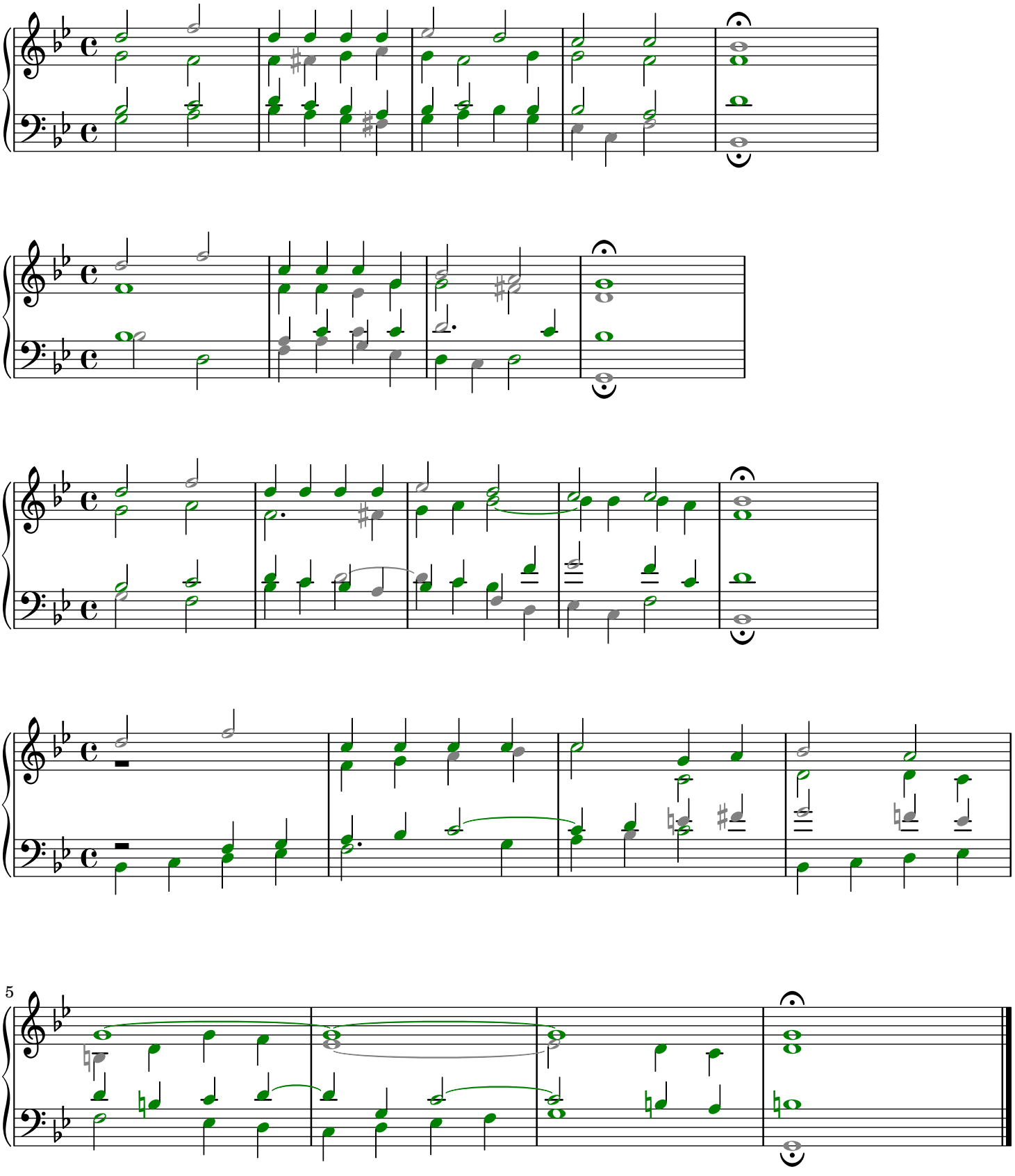
Accidentals (all ’#’ here by default) are due for probable respelling in score.

The shortest source duration translates by default to a semitone, and vice versa. If that duration is contextually especially short, as here, wholetones will become the sounding intervallic unit.)

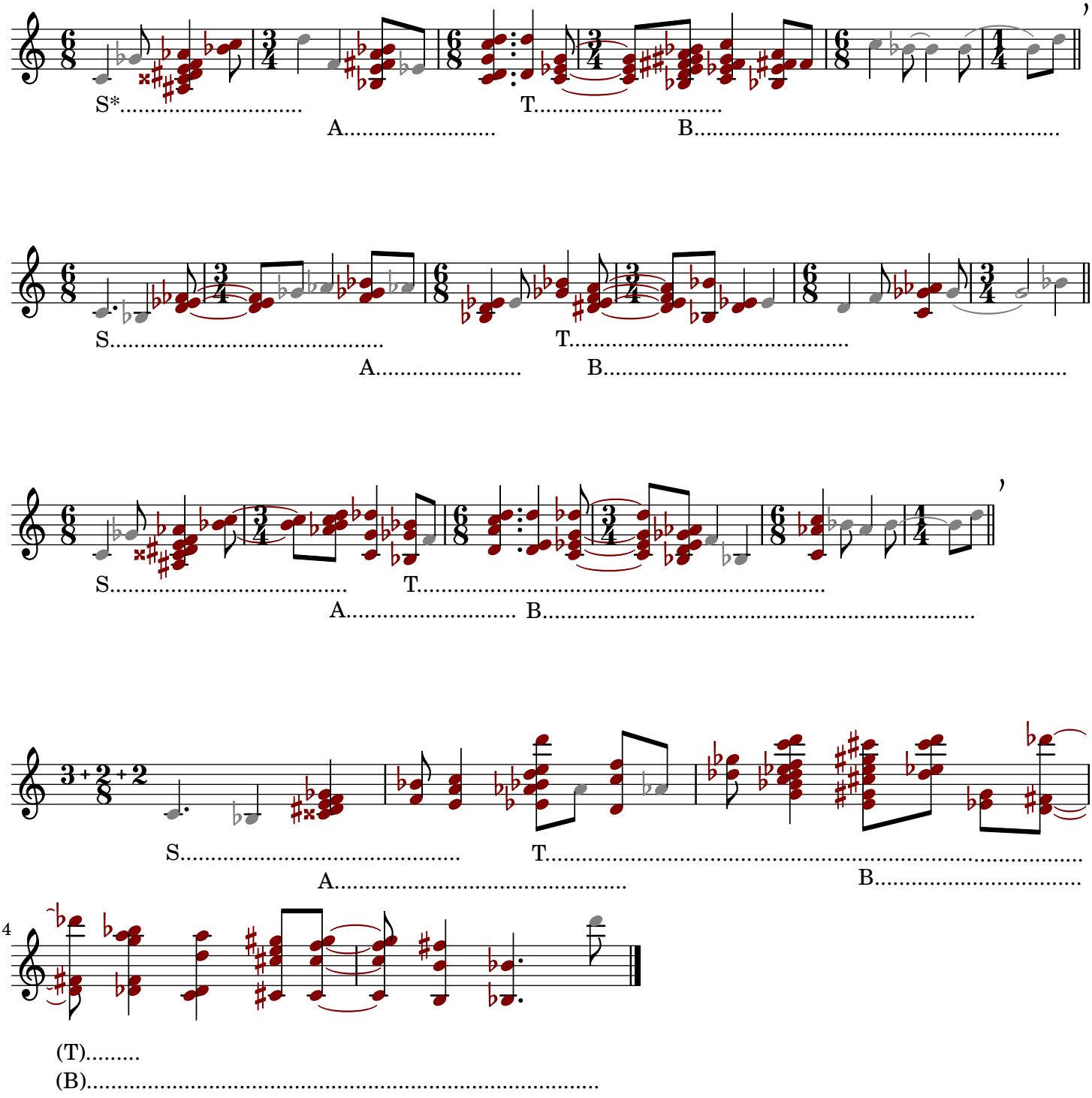
Output pitch center is chosen to close–match that of the source.

* This page was generated in Xfig 3.2.8.

Appendix B

J.S. Bach, Chorale "Meine Seel' erhebt den Herren", BWV 324

Rotation: Exchange of Pitch/Time Proportions

applied to the chorale phrases separately

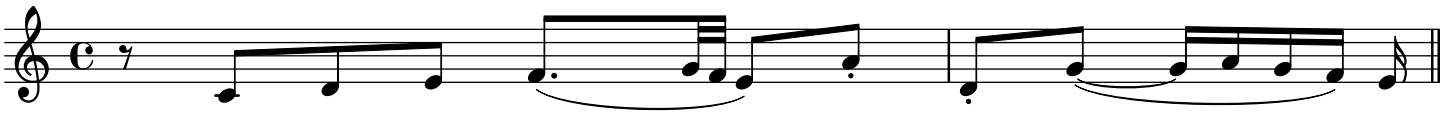


* Dotted lines indicate corresponding chorale voice ranges, with the left-most event here referencing the top-most chorale pitch.

Appendix C

Suggested Fugue-Subject Articulations *

with the goal to clarify pattern

WTC I: 1 (BWV 846)

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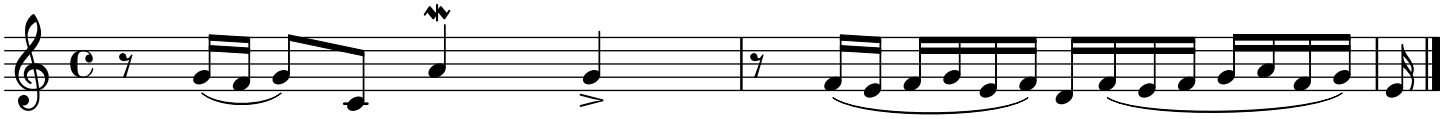
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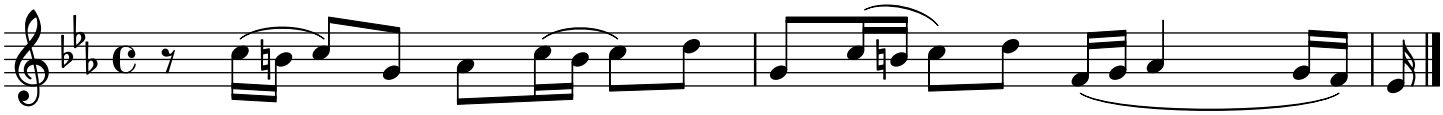
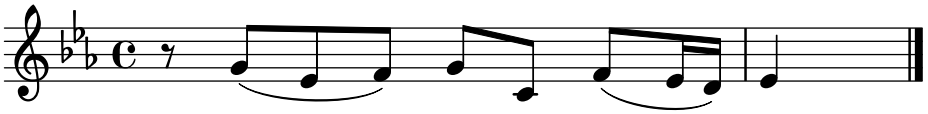
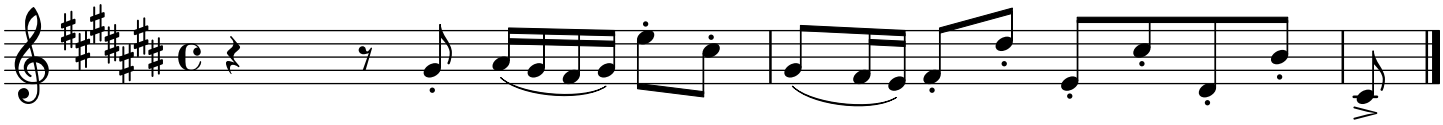
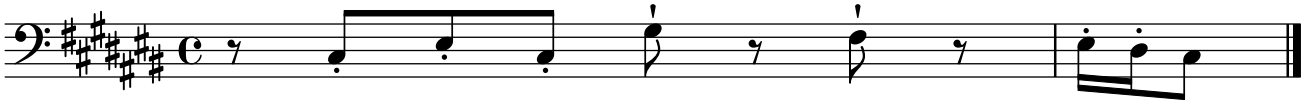

WTC II: 2 (BWV 871)

WTC I: 3 (BWV 848)



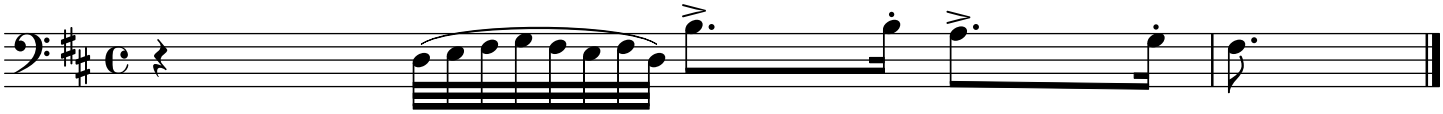
WTC II: 3 (BWV 872)

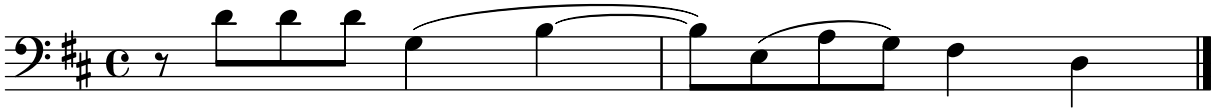


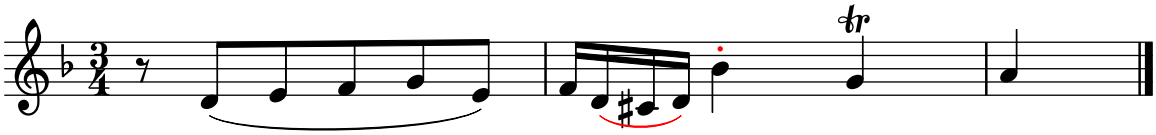
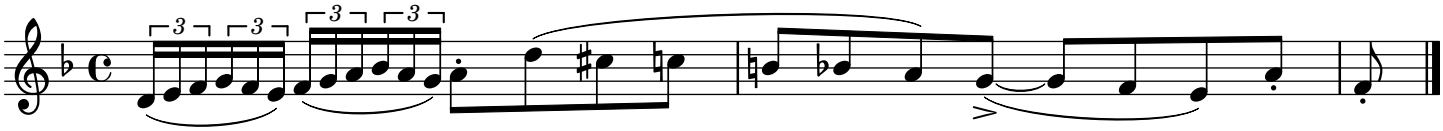
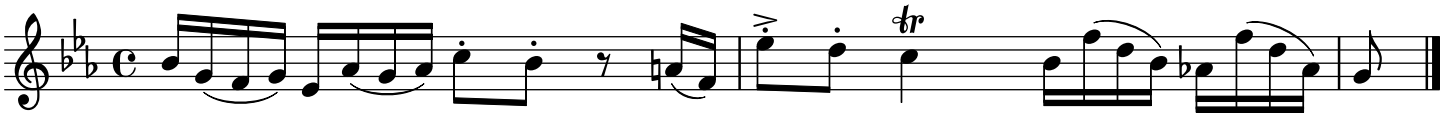
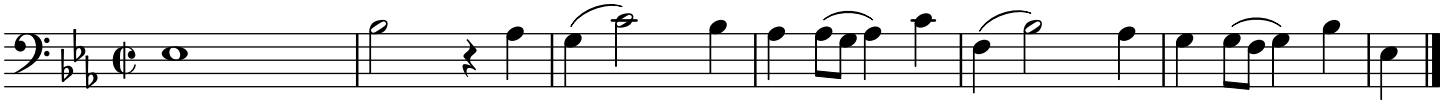
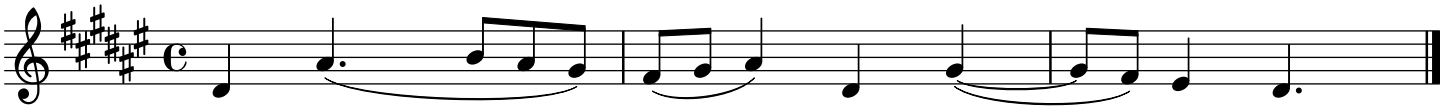
* The few in Bach's hand (according to G. Henle Verlag) are printed here in red.

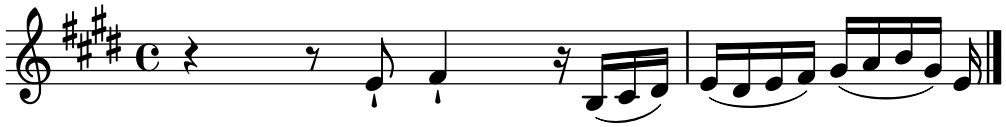
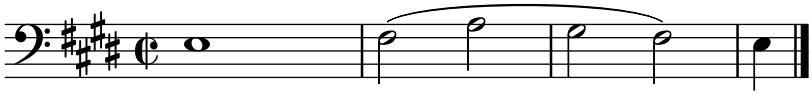
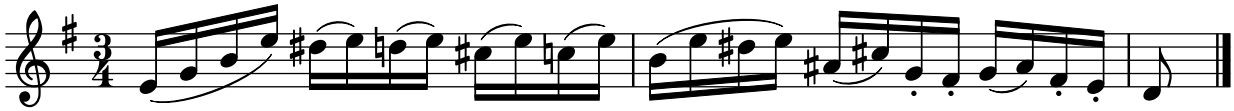
WTC I: 4 (BWV 849)

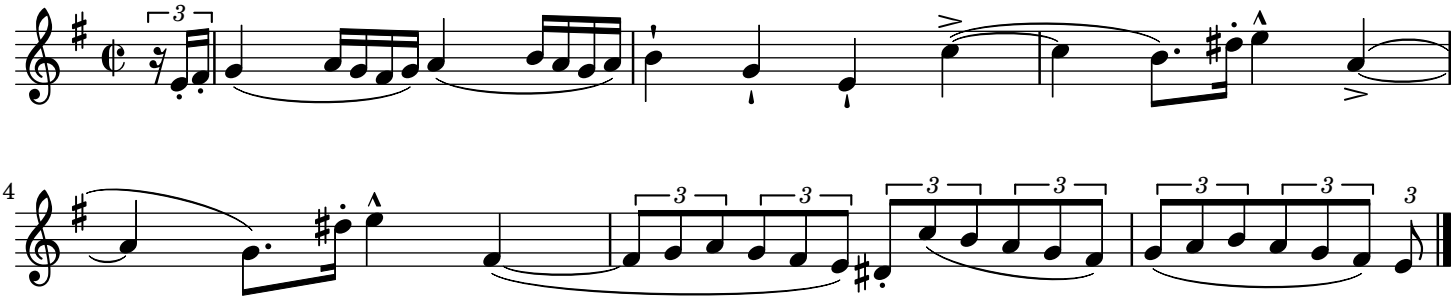
WTC II: 4 (BWV 873)

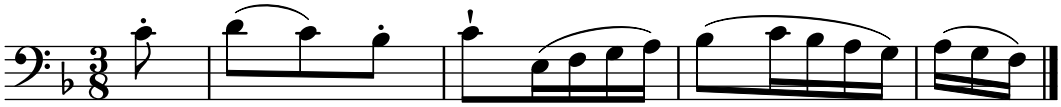
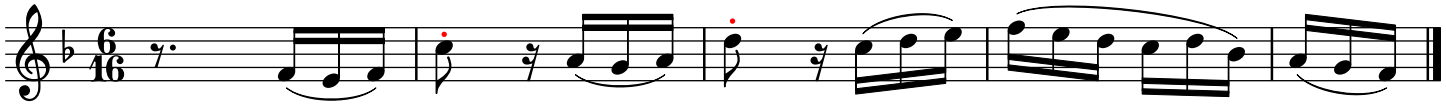
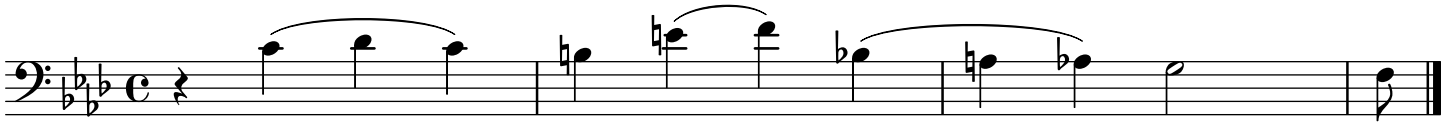
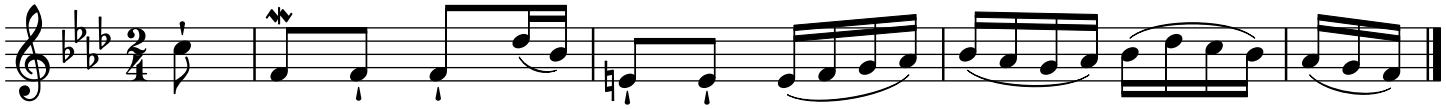
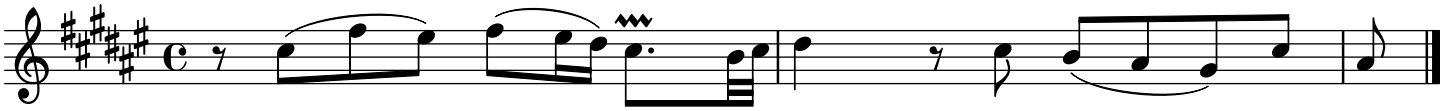
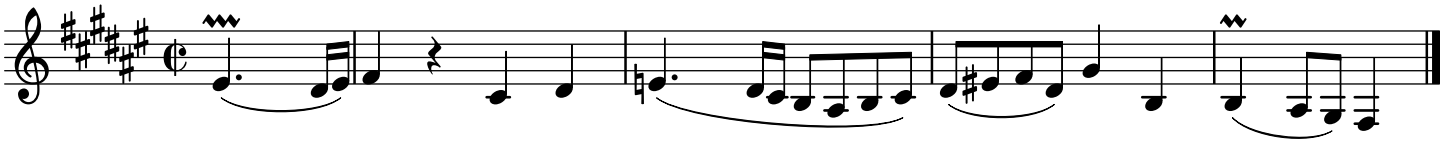
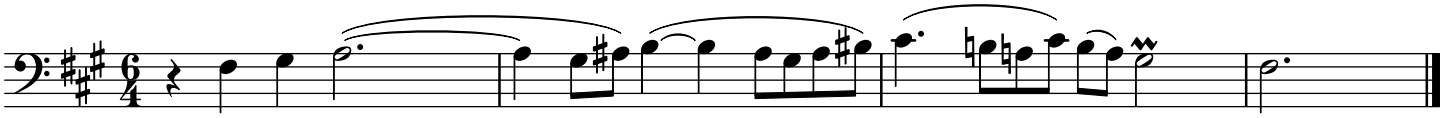
WTC I: 5 (BWV 850)

WTC II: 5 (BWV 874)

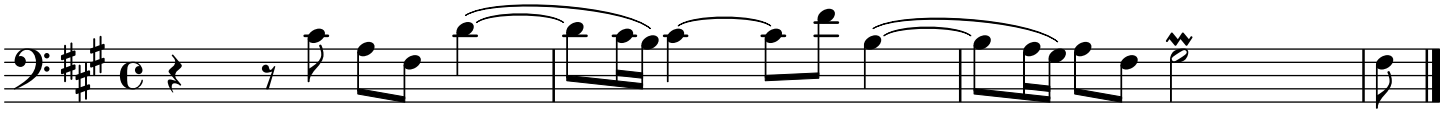


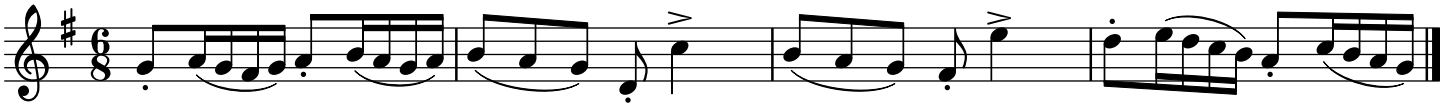
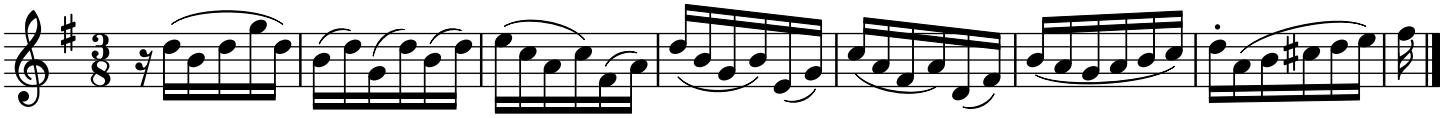
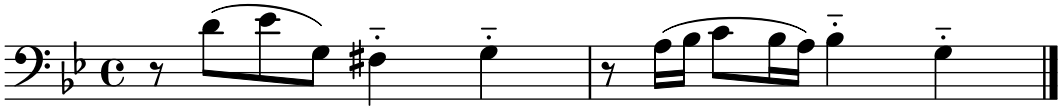
WTC I: 6 (BWV 851)

WTC II: 6 (BWV 875)

WTC I: 7 (BWV 852)

WTC II: 7 (BWV 876)

WTC I: 8 (BWV 853)

WTC II: 8 (BWV 877)

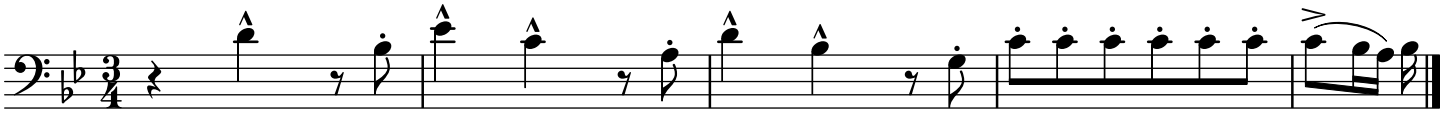
WTC I: 9 (BWV 854)

WTC II: 9 (BWV 878)

WTC I: 10 (BWV 855

WTC II: 10 (BWV 879)



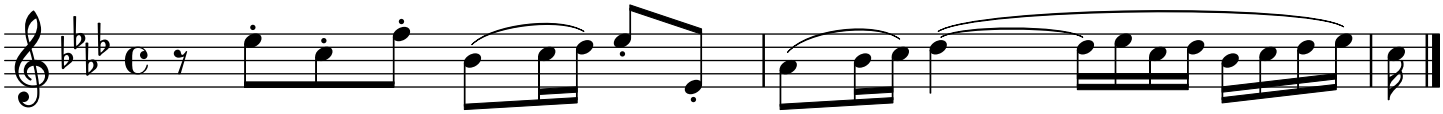
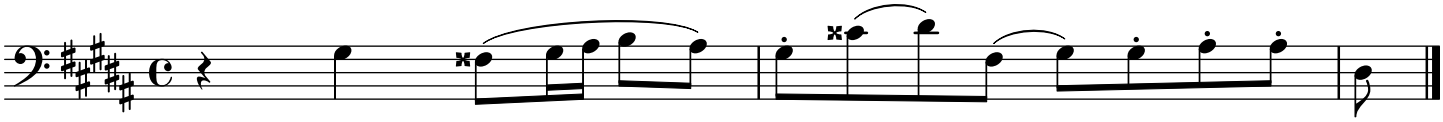
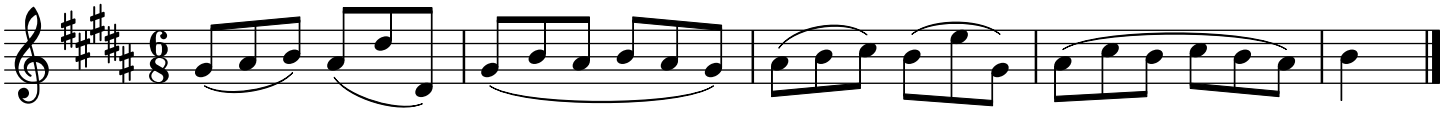
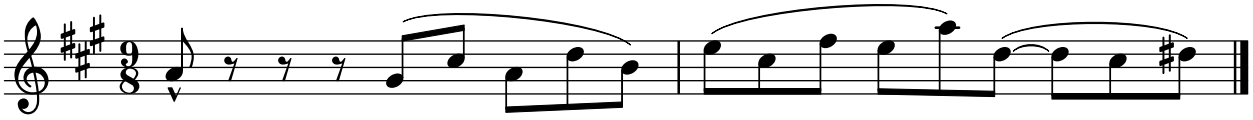
WTC I: 11 (BWV 856)

WTC II: 11 (BWV 880)

WTC I: 12 (BWV 857)

WTC II: 12 (BWV 881)

WTC I: 13 (BWV 858)

WTC II: 13 (BWV 882)

WTC I: 14 (BWV 859)

WTC II: 14 (BWV 883)

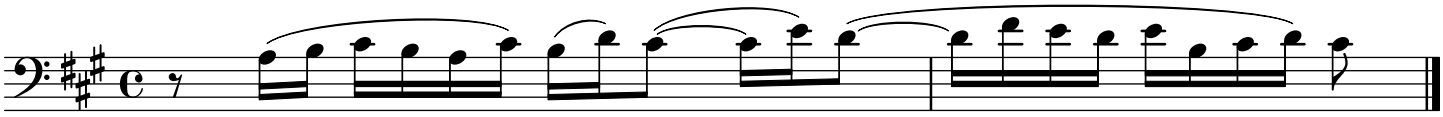


WTC I: 15 (BWV 860)

WTC II: 15 (BWV 884)

WTC I: 16 (BWV 861)

WTC II: 16 (BWV 885)

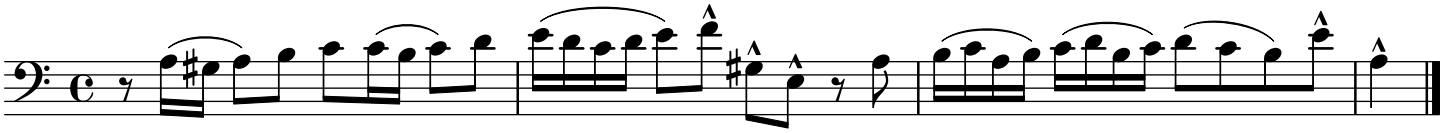


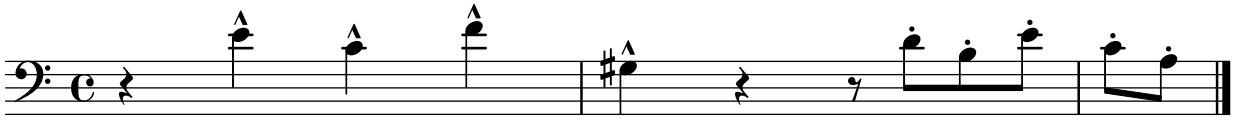
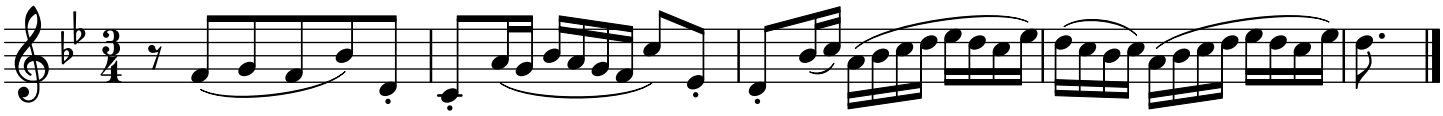
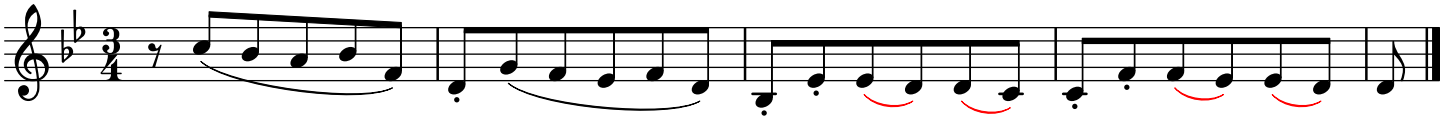
WTC I: 17 (BWV 862)

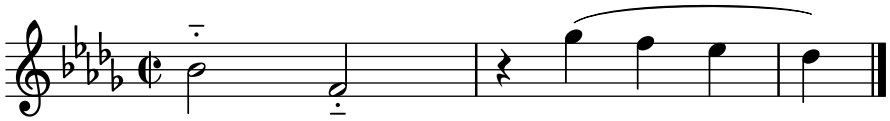
WTC II: 17 (BWV 886)

WTC I: 18 (BWV 863)

WTC II: 18 (BWV 887)

WTC I: 19 (BWV 864)

WTC II: 19 (BWV 888)

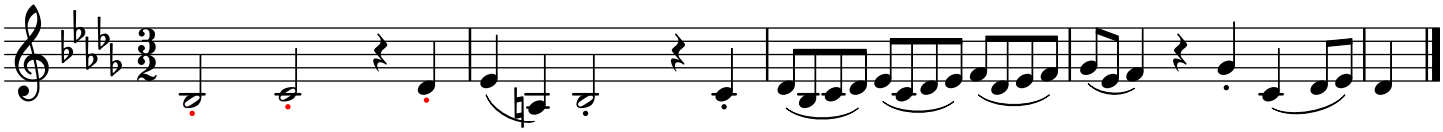
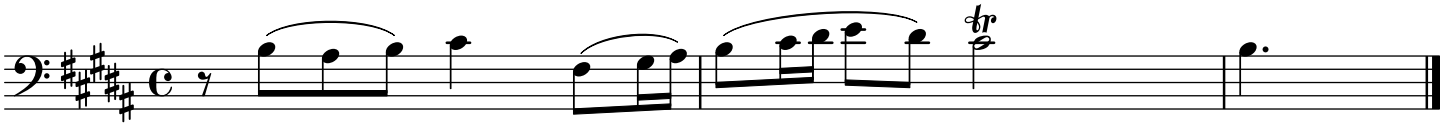


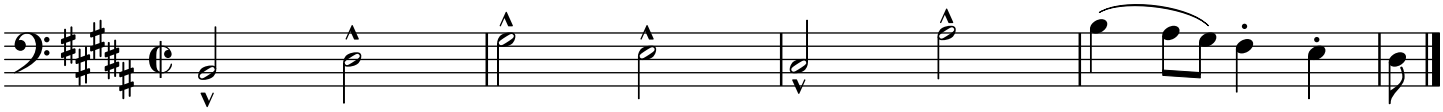
WTC I: 20 (BWV 865)



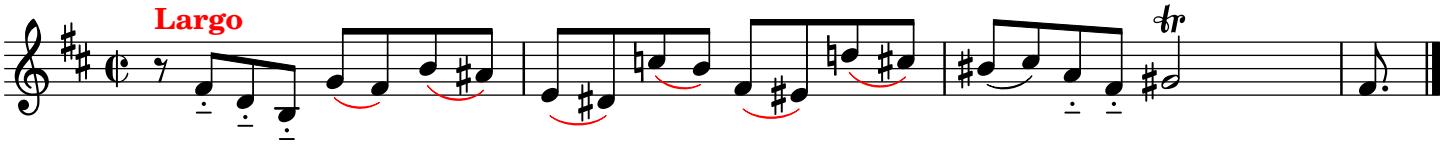
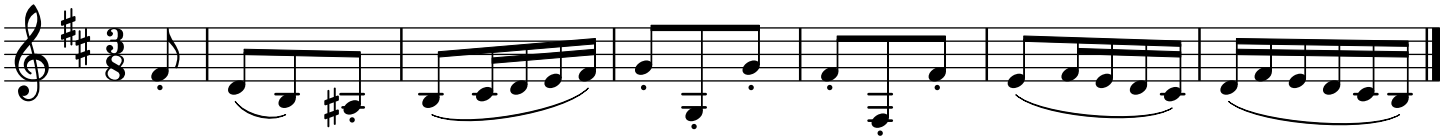
WTC II: 20 (BWV 889)

WTC I: 21 (BWV 866)

WTC II: 21 (BWV 890)

WTC I: 22 (BWV 867)



WTC II: 22 (BWV 891)

WTC I: 23 (BWV 868)

WTC II: 23 (BWV 892)



WTC I: 24 (BWV 869)



WTC II: 24 (BWV 893)